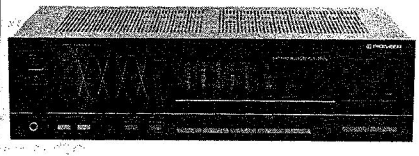
PIONEER®

Service Manual

CIRCUIT DESCRIPTIONS
REPAIR & ADJUSTMENTS



ORDER NO.
ARP1168-0

STEREO AMPLIFIER

SA-1270(BK)
SA-1270(A)(BK)

MODEL SA-1270 (BK) AND SA1270 (A) (BK) COMES IN THREE VERSIONS DISTINGUISHED AS FOLLOWS:

Type	Applicable model		Power requirement	Export destination
	SA-1270 [BK]	SA-1270 [A][BK]		
KU	O	O	AC120V only	U.S.A.
S/G	O	–	AC110V, AC120V, AC220V, AC240V (switchable)	U.S. Military
KC	O	–	AC120V only	Canada

- **This service manual is applicable to the SA-1270 (BK)/KU and SA-1270 (A) (BK)/KU types.**
- **As to the S/G type, please refer to page 37.**
- **As to the SA-1270 (BK)/KC type, please refer to the additional service manual.**
- **SA-1270 (A)(BK) is the same as the SA-1270 (BK) except for the remote control unit.**

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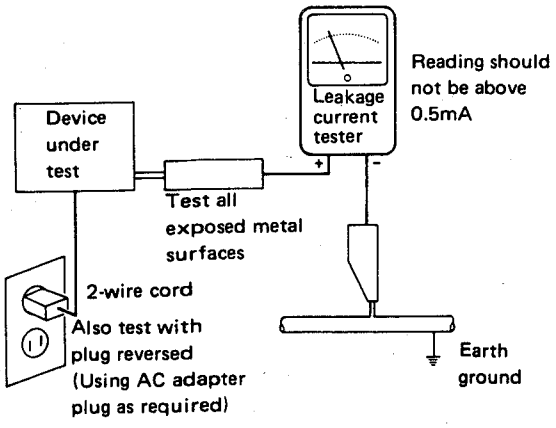
1. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a ⚠ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which dose not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.

2. SPECIFICATIONS

Amplifier Section

Continuous average power output is 105 watts* per channel, min., at 8 ohms from 20 Hertz to 20,000 Hertz with no more than 0.05% total harmonic distortion.

Input (Sensitivity/Impedance)
- PHONO ..... 2.5 mV/47 kΩ
- TUNER, CD, VIDEO, TAPE PLAY, ADAPTOR IN ..... 150 mV/47 kΩ

Phono Overload Level (T.H.D. 0.1%, 1 kHz) 100mV

Output (Level/Impedance)
- TAPE REC, ADAPTOR OUT ..... 150 mV/2.2 kΩ

Frequency Response
- PHONO 20 Hz to 20 kHz ..... ±1 dB
- TUNER, CD, VIDEO, ADAPTOR IN, TAPE PLAY 20 Hz to 50 kHz ..... $^{+1}_{-2}$ dB

Graphic equalizer
- 100 Hz ..... ±10 dB
- 330 Hz ..... ±10 dB
- 1 kHz ..... ±10 dB
- 3.3 kHz ..... ±10 dB
- 10 kHz ..... ±10 dB

Loudness Control (Volume control set at −40 dB position)
- 100 Hz ..... +7 dB
- 10 kHz ..... +4 dB

Hum and Noise (IHF, short circuited, A network)
- PHONO ..... 72 dB
- CD, VIDEO, ADAPTOR IN, TUNER, TAPE PLAY ..... 90 dB

Miscellaneous

Power Requirements
- U.S., Canadian models ..... AC 120 V, 60 Hz
- Other destination models .. ~AC 110 V/120 V/220 V/240 V (switchable), 50/60 Hz

Power Consumption
- U.S. model ..... 220 W (UL)
- Canadian model 220W
- Other destination models ..... 220 W

Dimensions ..... 479 (W) x 172 (H) x 358 (D) mm
18-7/8 (W) x 6-3/4 (H) x 14-1/8 (D) in

Weight (without package) ..... 8 kg (17 lb 10 oz)

Furnished Parts

Remote control unit 1
Batteries AAA/R03 (SA-1270) 2
AA/R6 (SA-1270(A)) 2
Operating Instructions 1

NOTE:
- *Specifications and design subject to possible modification without notice due to improvements.*
- **Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Claims for Amplifier.*

3. FRONT PANEL FACILITIES

MAIN POWER switch
Press to turn power to the unit ON/STAND-BY and OFF.

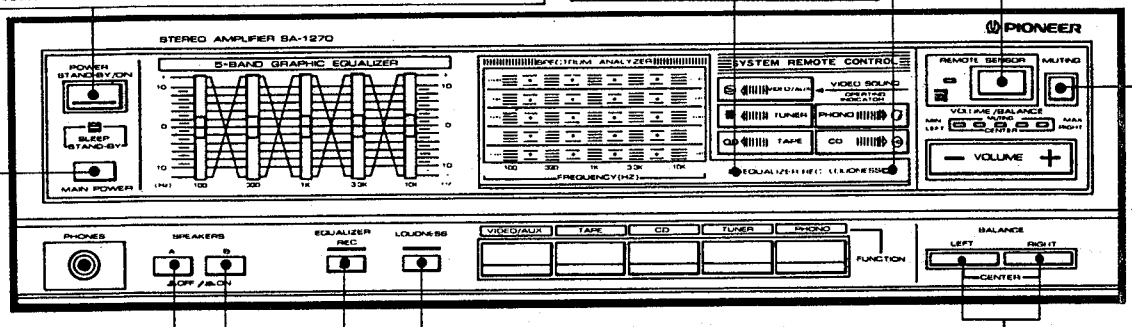
POWER switch
- When the MAIN POWER switch is ON, this unit's power switch can be turned ON/STAND-BY.
- Each time the switch is pressed the power switches between ON and STAND-BY, and when in the STAND-BY mode, the indicator lights.
- The accessory remote control unit can also be used to operate this switch's ON/STAND-BY function.
- The POWER switch selects the transformer's secondary even in STAND-BY position. The unit's circuitry will work as long as the MAIN POWER switch is ON, and the power cord is connected to a power outlet.
- When not using the unit for a long period, turn OFF this switch.

MUTING switch
Use to temporarily cut out all audio signals.
When the mode display shows the flashing VOLUME/BALANCE indicator, the function is ON, and all sounds are cut off.
When turned OFF, the sound returns to its previous level.
The muting ON/OFF function can also be operated by the accessory remote control unit.

REMOTE SENSOR indicator
This indicator lights when a signal from the remote control unit is received.

LOUDNESS indicator

EQUALIZER REC indicator



SPEAKERS A selector switch
Use this switch to listen to the speaker systems connected to the SPEAKERS A terminals.
[ON] — Depressed position: Sound is heard from speaker systems.
[OFF] — Released position: No sound is heard from speaker systems. set to this position when listening with headphones.

SPEAKERS B selector switch
Use this switch to listen to the speaker systems connected to the SPEAKERS B terminals.
[ON] — Depressed position: Sound is heard from the speaker systems.
[OFF] — Released position: No sound is heard from the speaker systems.

NOTE:
When the speaker system is connected to only one speaker terminal (A or B) and both A and B selector switches are ON, there will be no sound.
Turn ON only the selector to which the speaker system is connected.

EQUALIZER REC selector switch
When performing recording, this switch allows you to choose the sound before it is compensated with the graphic equalizer, or the sound produced after equalizer compensation.
[ON] (depressed position): Set to this position to record the sound produced after equalizer compensation.
[OFF] (released position): Set to this position to record the sound produced before equalizer compensation.

BALANCE control
Normally, the BALANCE indicator of the mode display is set to the center position. By pressing the [L] and [R] controls simultaneously, the balance will be set to the center position. If the sound is unbalanced to one side, adjust in the following way: If the sound is too loud on the right side, press [L], if too loud on the left side, press [R].

LOUDNESS switch
Use to improve sound quality when listening at low sound levels. The function is on when the LOUDNESS indicator is lighted. Low and high frequencies will be augmented, thus producing dynamic sound even at low volume levels.

GRAPHIC EQUALIZER Controls

These controls can be used to emphasize or de-emphasize sounds in the frequency bands 100 Hz, 330 Hz, 1 kHz, 3.3 kHz, and 10 kHz, thus allowing you to control tone quality. The center position of each control is the normal (flat) setting; when raised above the center position, the control's frequency band is emphasized; when lowered, the band is de-emphasized.

Spectrum Analyzer

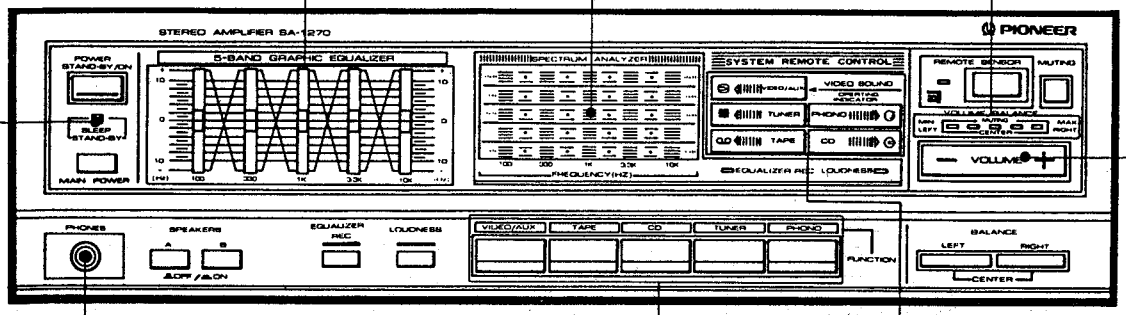
This display shows the condition of sound signals compensated with the graphic equalizer controls.
(Because the level indicator is connected to the input side, the indication does not change when the VOLUME control is turned.)

VOLUME control

Use to adjust sound volume.
[+] — Sound volume is increased.
[−] — Sound volume is decreased.
Adjustment can also be performed with the accessory remote control unit.

VOLUME/BALANCE indicator

- Normally, this indicator functions to display the sound volume level.
- When the balance control is pressed, the indicator switches to display the right-left sound balance. After several seconds, the indicator returns automatically to the volume display.
- When the MUTING switch is ON, the indicator flashes.



PHONES jack

When using headphones, insert their plug into this jack.

SLEEP/STAND-BY indicator

This indicator lights or flashes when the accessory remote control unit is used to turn the SLEEP key or POWER key. When the SLEEP key is ON, the indicator will light. (Initially it will flash slowly, then gradually become faster.)
60 minutes after the sleep timer is turned ON, the power switch will be turned STAND-BY automatically.

This component features a built-in microcomputer which will recall the last-set positions of the following switches for up to about one week after the main power switch is turned OFF. As a result, when the power is turned ON again, the previously set positions will be recalled automatically:

- FUNCTION switch
- MUTING switch
- LOUDNESS switch
- BALANCE control
- VOLUME control

When the unit is not used for more than a week, the memorized setting positions will be erased, and returned to the the following settings:

- VOLUME control ..... minimum
- LOUDNESS, MUTING switches ..... OFF
- BALANCE control ..... CENTER
- FUNCTION switches ..... TUNER

FUNCTION indicators

These indicators light to show the setting of the FUNCTION switches.

FUNCTION switches

Use to select playback source.
[PHONO] — Press when listening to record playback on a turntable.
[TUNER] — Press when listening to AM or FM broadcasts with a tuner.
[CD] — Press when listening to compact disc playback with a CD player.
[TAPE] — Press when listening to tape playback with a tape deck.
[VIDEO/AUX] — Press when listening to programs from a component connected to the VIDEO/AUX terminals.

Remote Control Unit (SA-1270 — CU-SA001)

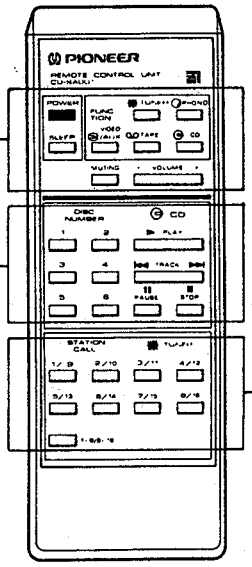
[Amplifier operating section]

POWER key:
Use to switch the power ON/STAND-BY.
SLEEP key:
Use to switch the SLEEP TIMER ON/STAND-BY. Sixty minutes after the SLEEP TIMER is switched ON, the amplifier power will turn STAND-BY automatically.

FUNCTION keys:
Use to select the FUNCTION switches.
MUTING key:
Use to select the MUTING ON/OFF.
VOLUME key:
Use to adjust the sound volume UP/DOWN.

[Compact disc player operating section]

DISC NUMBER keys (1 — 6)
Designates the number of the disc to be played. (Used only for a multi-play CD player.)
PLAY key:
Press to begin playback or to release the player from the pause mode.
TRACK key:
Use to skip to the beginning of the next track, or to return to the previous track.
PAUSE key:
Use to temporarily stop playback, and to release from the pause mode.
STOP key:
Press to stop playback.



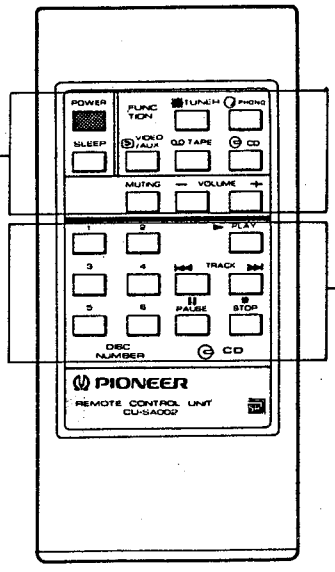
[Tuner operating section]

STATION CALL keys (1 — 16):
Use to select broadcasting stations.
STATION MODE select key (1—8/, 9—16):
Use to select the number of STATION CALL keys. Each time this switch is pressed, the STATION CALL keys switches alternately between 1 — 8 and 9 — 16.

Remote Control Unit (SA-1270(A) — CU-SA002)

[Amplifier operating section]

POWER key:
Use to switch the power ON/STAND-BY.
SLEEP key:
Use to switch the SLEEP TIMER ON/STAND-BY. Sixty minutes after the SLEEP TIMER is switched ON, the amplifier power will turn STAND-BY automatically.
FUNCTION keys:
Use to select the FUNCTION switches.
MUTING key:
Use to select the MUTING ON/OFF.
VOLUME key:
Use to adjust the sound volume UP/DOWN.



[Compact disc player operating section]

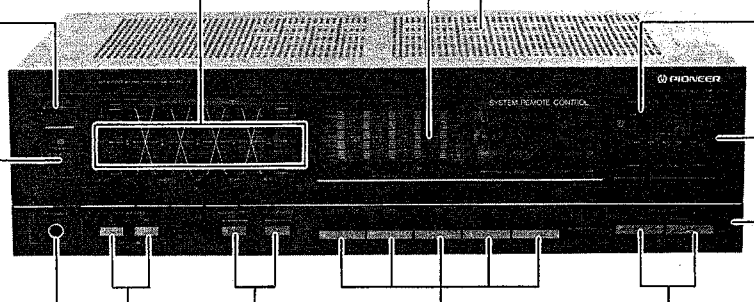
DISC NUMBER keys (1 — 6)
Designates the number of the disc to be played. (Used only for a multi-play CD player.)
PLAY key:
Press to begin playback or to release the player from the pause mode.
TRACK key:
Use to skip to the beginning of the next track, or to return to the previous track.
PAUSE key:
Use to temporarily stop playback, and to release from the pause mode.
STOP key:
Press to stop playback.

4. PARTS LOCATION

NOTES:

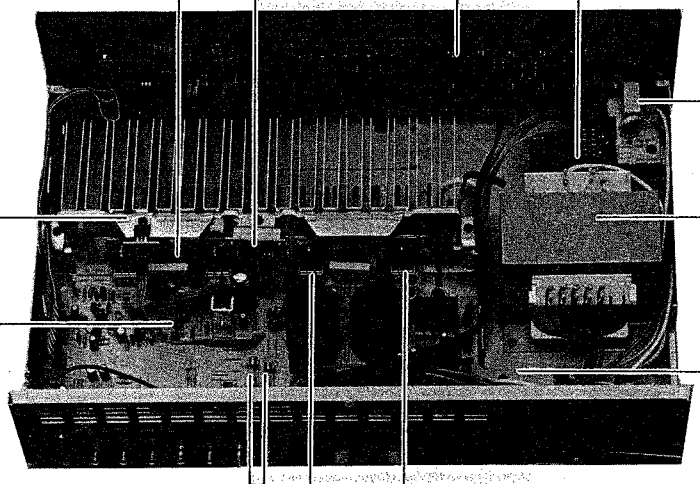
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Front Panel View



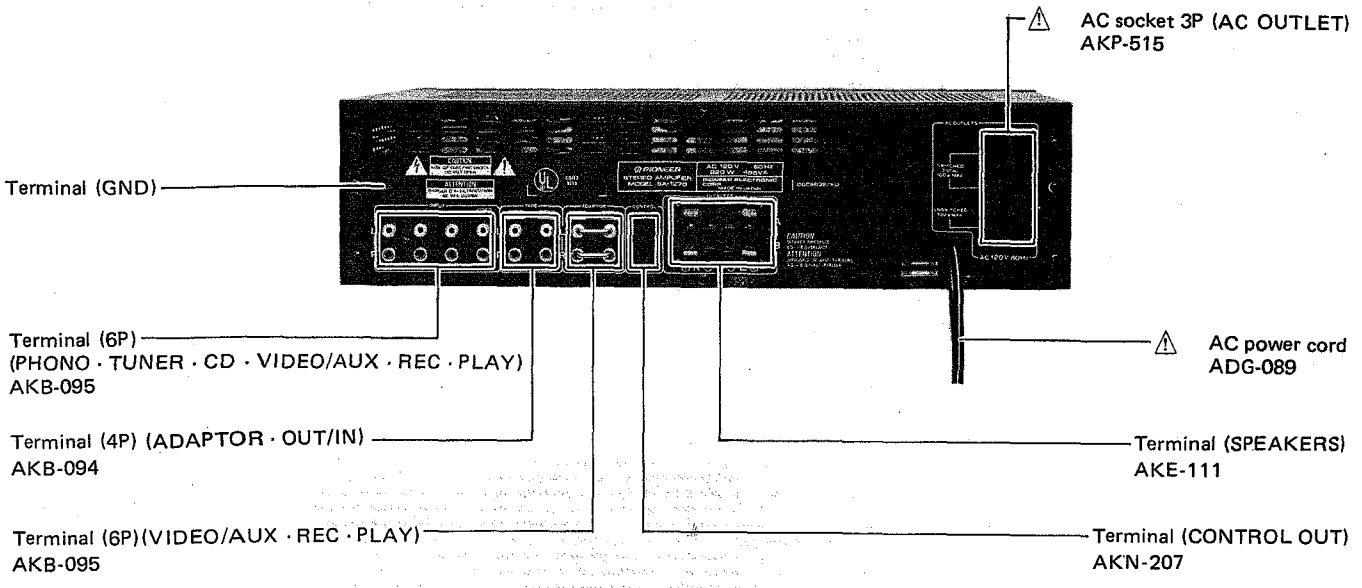
Slide knob (5 BAND GRAPHIC EQUAUZEP) ACU1004
Tact switch (POWER) STAND-BY/ON ASG-711
Push knob (MAIN POWER) AAD1033
Headphone jack AKN-045
Puse knob (SPEAKERS) AAD1034
Tack switch (EQUALIZER REC · LOUDNESS) ASG-711
Spacer panel AAK1045
Bonnet case ANE1024
Display panel AAK1053
Tact switch (MUTING) ASG-711
Aluminum panel AAH1004
Tact switch (BALANCE L/R) ASG-711
Tact switch (VIDEO/AUX · TAPE · CD · TUNER · PHONO) ASG-711

Top View with Bonnet Case Removed

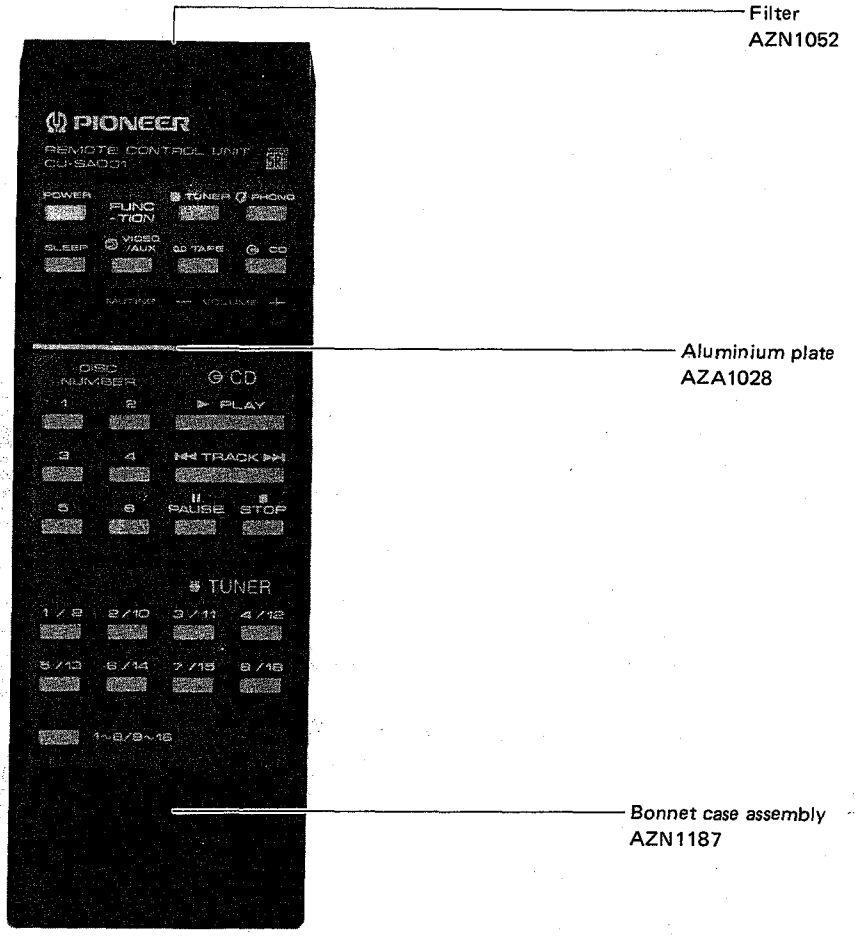


Transistor assembly
IC Assembly
Heat Sink
AF Assembly AWZ1065
★★ Fuse (FU3, FU4 2A-125V) AEK-122
Transistor (Q3, Q4) 2SA1302-0*
Complex (A) assembly AWZ1070
Switch (A) assembly
Switch (B) assembly
⚠ Power transformer (T1 120V) ATS1018
★★ Fuse (FU1 6.3A 125V) AEK-309
Transistor (Q1) 2SC3281
Transistor (Q2) 2SC3281

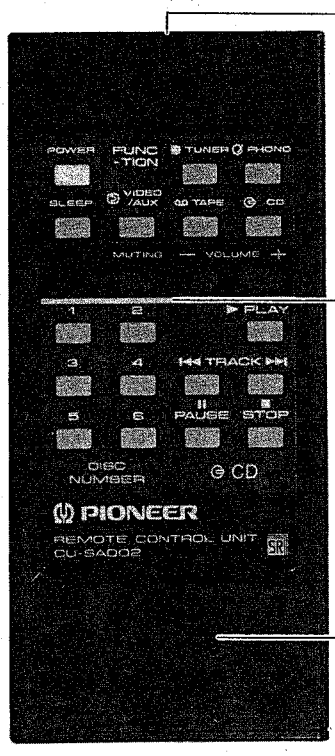
Rear Panel View



Remote Control Unit CU-SA001 (SA-1270 (BK))



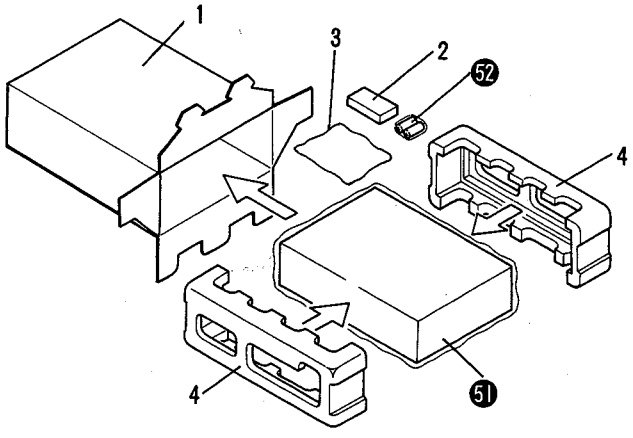
Remote Control Unit CU-SA002 (SA-1270 (A)(BK))



5. PACKING

Parts List of Paking

Mark	No.	Part No.	Description
	1	AHD1056	Packing case (SA-1270 (BK))
		AHD1096	Packing case (SA-1270 (A)(BK))
	2	AXD1004	Remote control unit (SA-1270 (BK))
		AXD1005	Remote control unit (SA-1270 (A)(BK))
	3	ARB1015	Operating instruction
	4	AHA1015	Front rear pad
	51		Polyethylene sheet
	52		Battery assembly



6. EXPLODED VIEWS AND PARTS LIST

NOTES:

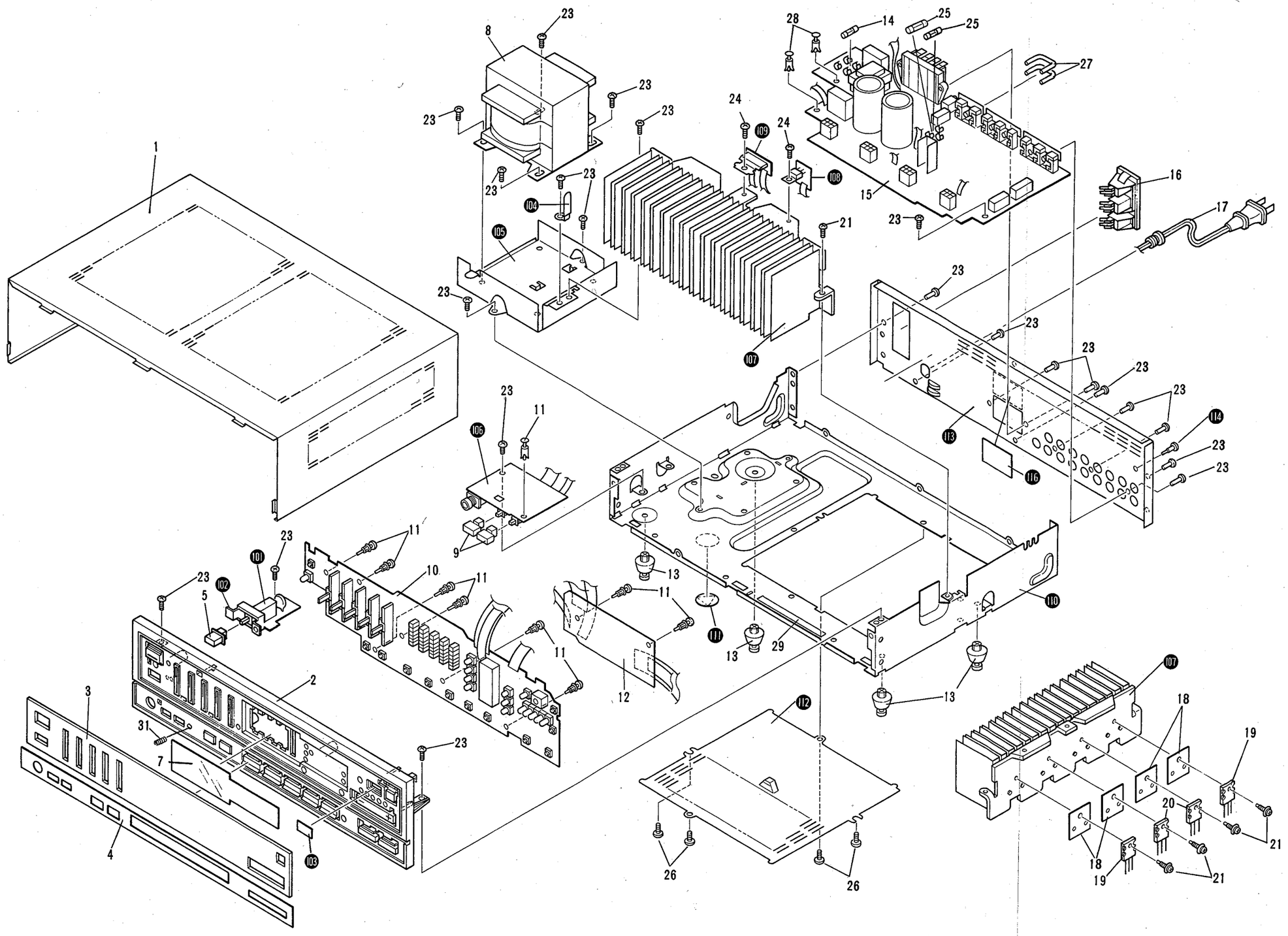
- *Parts without part number cannot be supplied.*
- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Parts List of Exploded View

Mark	No.	Part No.	Description
	1	ANE1024	Bonnet case
	2	AMB1034	Front panel
	3	AAK1053	Display panel
	4	AAH1004	Aluminum panel
	5	AAD1033	Push knob (POWER)
	6	.....	.....
	7	AAK1054	Spacer panel
⚠	8	ATS1018	Power transformer (T1 120V)
	9	AAD1034	Push knob (SPEAKERS)
	10	AWZ1070	Complex (A) assembly
	11	AMR1066	Plastic rivet
	12	AWZ1071	Complex (B) assembly
	13	AEC-784	Leg assembly
⚠ ★★	14	AEK-309	FU1 Fuse (6.3A 125V)
	15	AWZ1065	AF assembly
⚠	16	AKP-515	AC socket 3P (AC OUTLET)
⚠	17	ADG-089	AC power cord
	18	AEP-313	Mica sheet
⚠ ★★	19	2SC3281-0*	Transistor (Q1A, Q2A)
⚠ ★★	20	2SA1302-0*	Transistor (Q3A, Q4A)
	21	ABA-258	Screw
	22	VMZ30P060FMC	Screw
	23	BBZ30P080FZK	Screw
	24	PBZ30P060FZK	Screw
	25	AEK-122	Fuse (FU3, FU4 2A 125V)
	26	BBZ30P060FZK	Screw
	27	AKM-004	
	28	AEC-525	Rivet
	29	AED1002	Blinder
	30	AEP-215	Binder
	31	ABH1013	Spring

Mark	No.	Part No.	Description
	101		Switch (B) assembly
	102		Switch holder
	103		Acrylil plate
	104		.....
	105		Trans holder
	106		Switch (A) assembly
	107		Heat sink
	108		Transistor assembly
	109		IC assembly
	110		Chassis
	111		UL caution sheet
	112		Bottom plate
	113		Rear panel
	114		Terminal (GND)
	116		Fuse label

Exterior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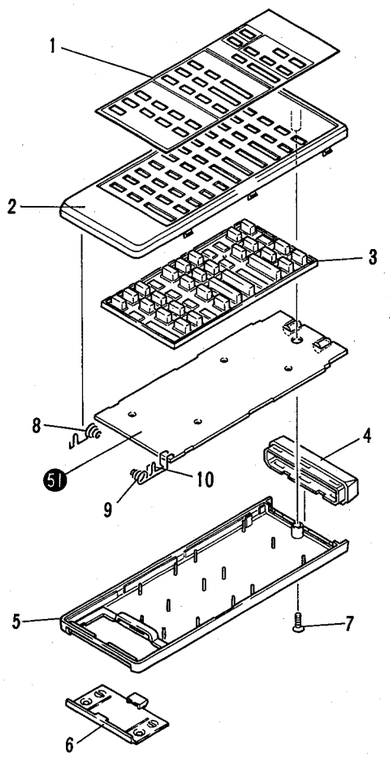
Remote Control Unit

For SA-1270 [BK]

- CU-SA001

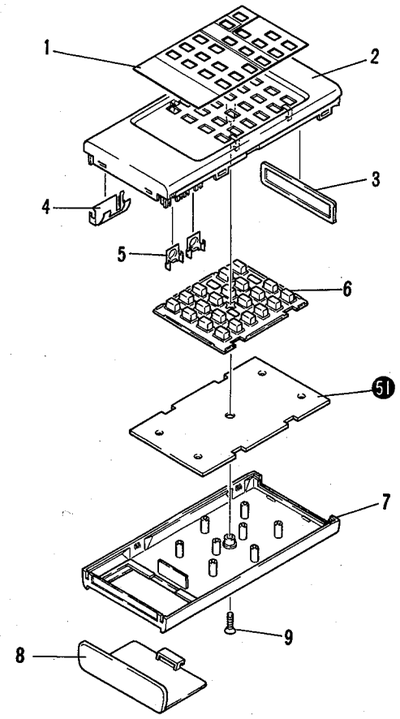


Part List

Mark	No.	Part No.	Description
	1	AZA1028	Aluminium plate
	2	AZN1187	Bonnet case assembly
	3	AZN1027	Rubber switch
	4	AZN1052	Filter
	5	AZN1050	Under case (Bottom case)
	6	AZN1188	Battery lid
	7	CRZ20P080FZK	Screw
	8	AZK1033	Battery spring (A) (–)
	9	AZK1023	Battery spring (B) (+)
	10	AZK1022	Battery terminal
	51		B.C. Board assembly

For SA-1270 (A)[BK]

- CU-SA002



Part List

Mark	No.	Part No.	Description
	1	AZA1030	Aluminium plate
	2	AZN-023	Bonnet case assembly
	3	AZN-022	Filter
	4	AZN-026	Battery terminal (C)
	5	AZK-012	Battery terminal (A)
	6	AZA1029	Rubber switch
	7	AZN-024	Under C case (Bottom case)
	8	AZN-025	Battery lid
	9	CRZ25P080FZK	Screw
	51		P.C. Board assembly

7. P.C.BOARDS CONNECTION DIAGRAM

AF ASSEMBLY AWZ1065

IC501 M5218P
IC502 TC9164
IC503 M5218PF
IC802 NJM79M15A
IC803 M5278L56(A)

Q601,602 2SA979
Q603,604 2SC2240
Q605,606,701,702 2SC2705
Q609,610 2SC2238
Q611,612 2SA968
Q703,704,801,802 2SC2603
Q705,803 2SD438
Q706 2SA1115
Q804 RN1201
Q805 RN1203

D601,602,607~610
701~704,812~815 1SS131
D603,604,605,606 RD5.6ESB
D705 KZL130
D801 RBV602
D802~809 S5566
D814 RD10ESB

TR ASSEMBLY
Q607.608 2SC2603/F

IC ASSEMBLY
IC801 μPC7815H

TI ATS1018
SWITCHED TOTAL 100W MAX
UN SWITCHED 100W MAX
C1 0.01
AC 120V 60Hz

COMPLEX

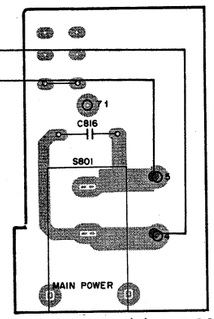
115A
56(A)

SA979
SC2240
702 2SC2705
SC2238
SA968
302 2SC2603
SD438

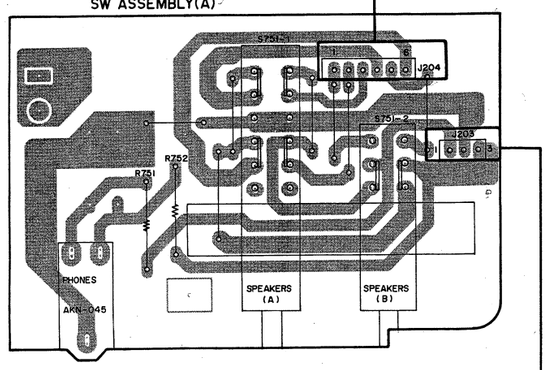
~ 610
12~ 815 1SS131
,606 RD5.6ESB

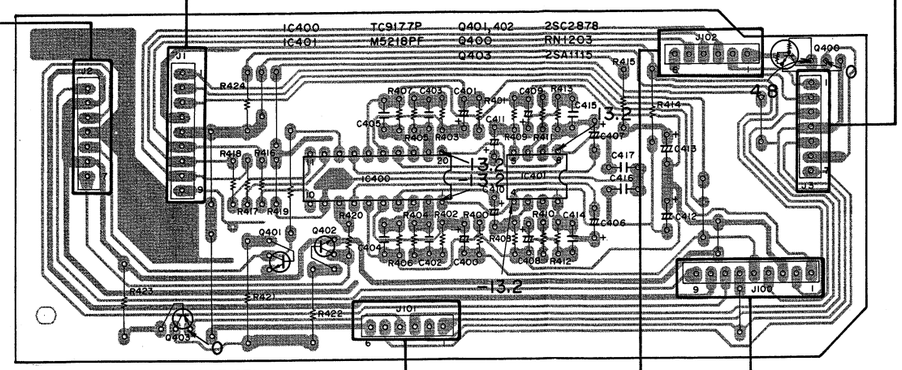
S5566
B

SW ASSMBLY(B) AWZ1067



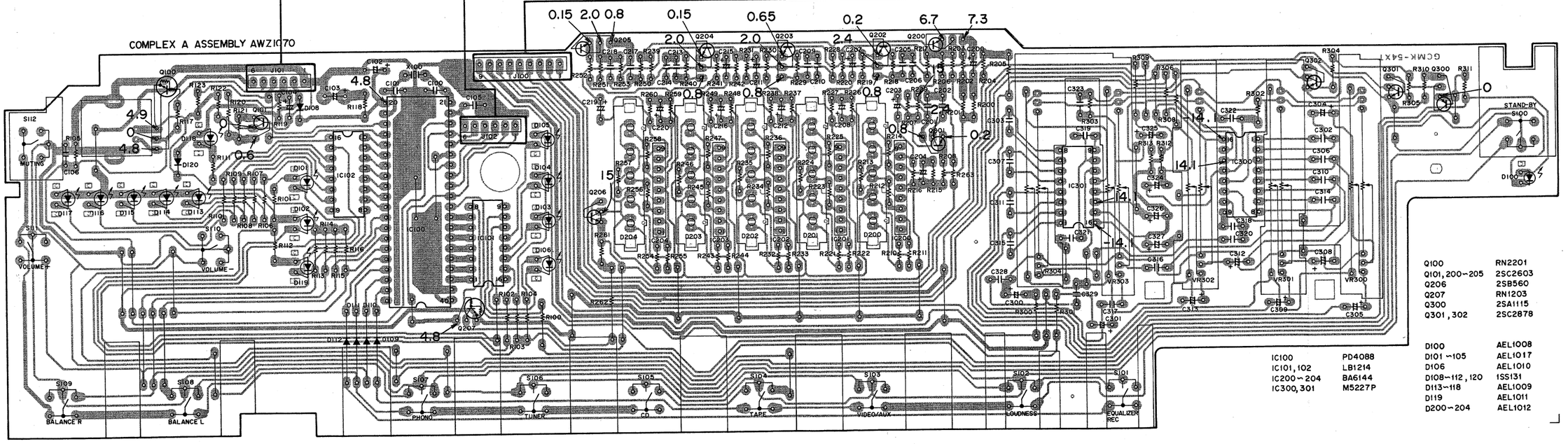
SW ASSEMBLY(A)





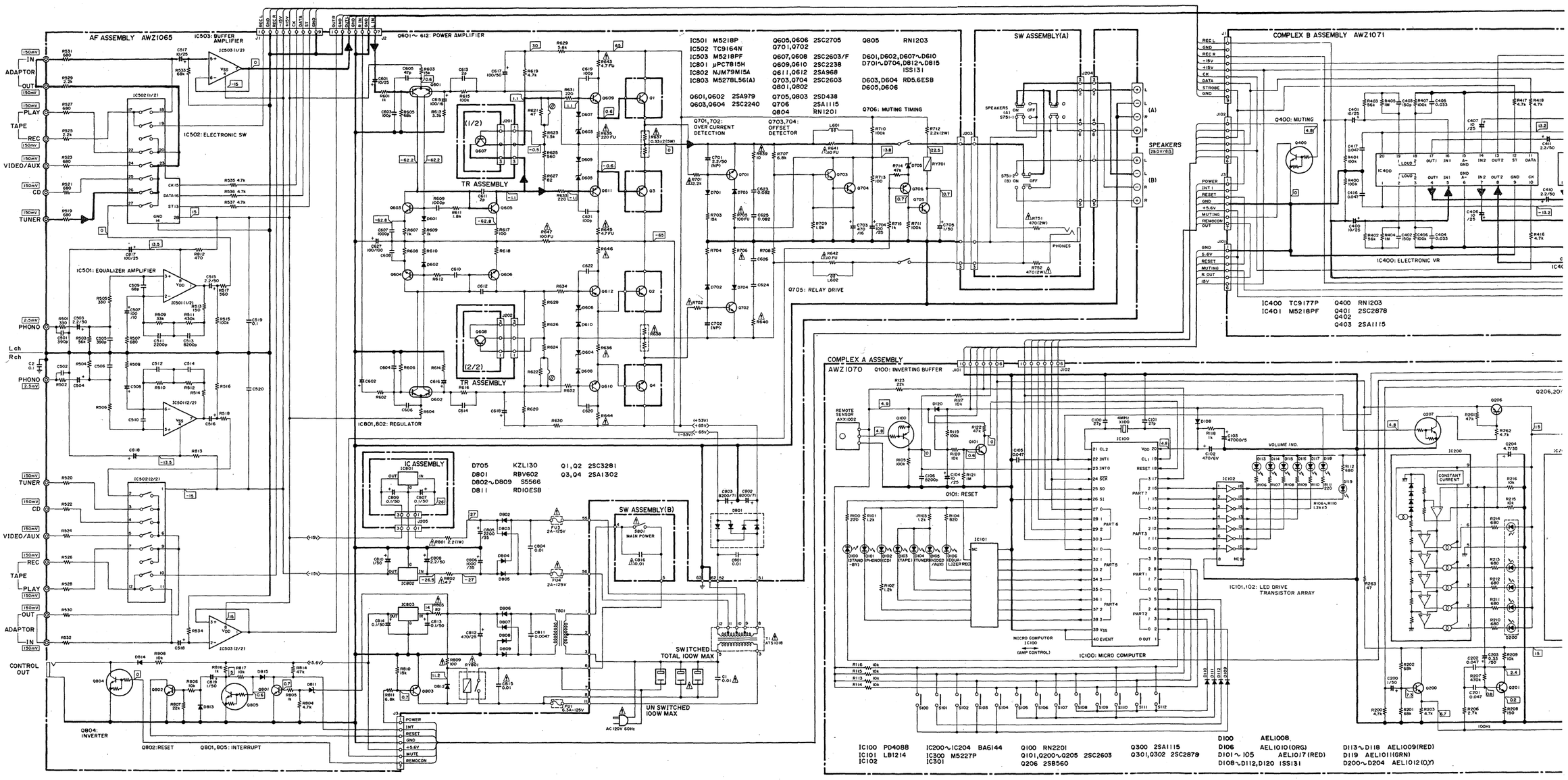
COMPLEX B ASSEMBLY AWZ1071

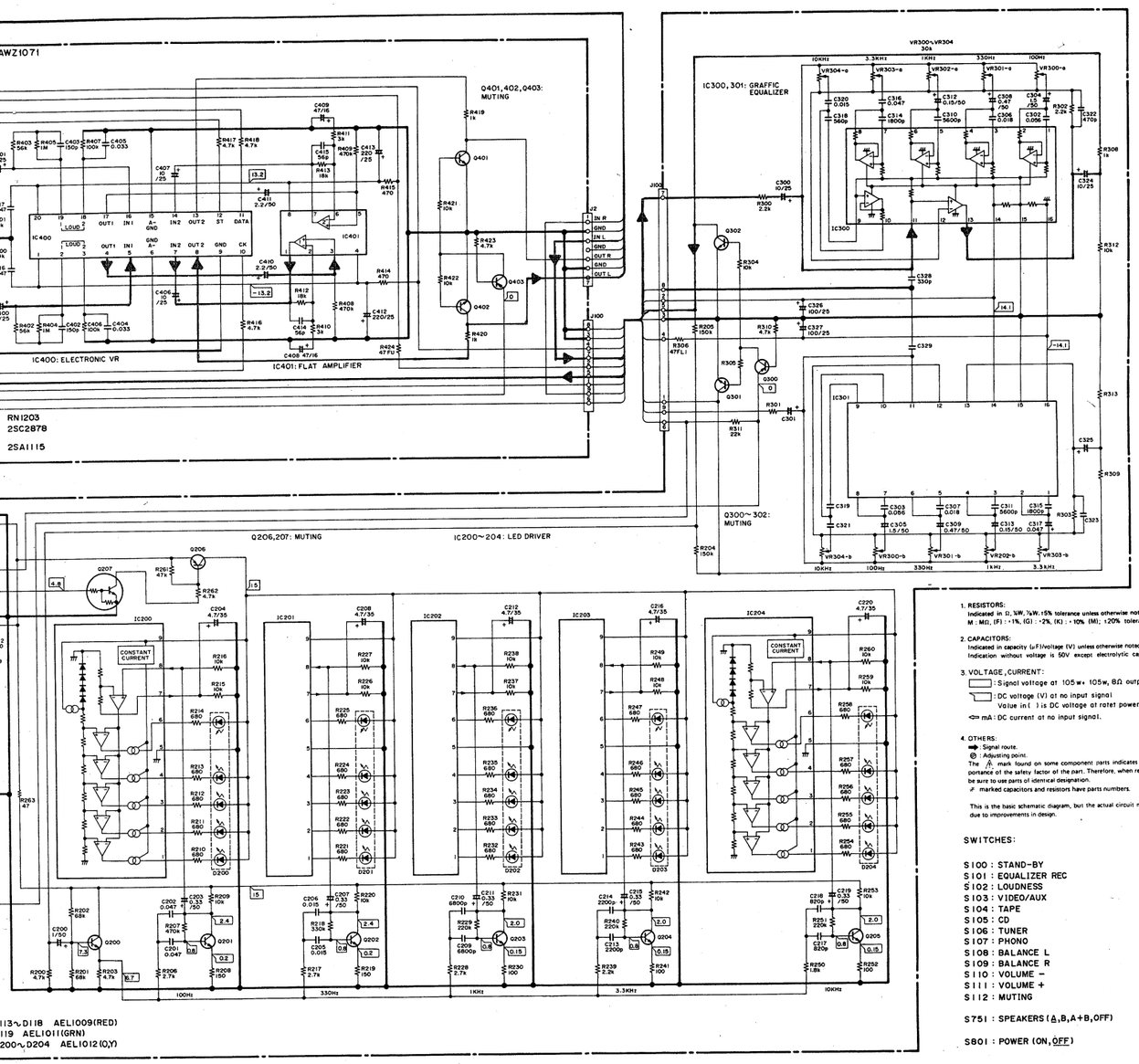
COMPLEX A ASSEMBLY AWZ1070



D117 D116 D115 Q100 D114 D112 D113 Q101 D108 D101 D102 D119 IC102 D109~D112 IC100 IC101 IC207 D105 D104 D103 D106 Q205 Q206 IC204 D204 Q204 IC203 D203 Q203 IC202 D202 IC201 D201 Q202 IC200 D200 Q200 Q201 VR304 VR303 VR302 VR301 VR300 IC301 IC300 Q302 Q301 Q300 D100

8. SCHEMATIC DIAGRAM





1. RESISTORS:
Indicated in Ω, ¼W, ½W, ±5% tolerance unless otherwise noted k : kΩ, M : MΩ, (F) : ±1%, (G) : ±2%, (K) : ±10% (M): ±20% tolerance

2. CAPACITORS:
Indicated in capacity (μF)/voltage (V) unless otherwise noted p : pF
Indication without voltage is 50V except electrolytic capacitor.

3. VOLTAGE, CURRENT:
▭ : Signal voltage at 105w+ 105w, 8Ω output (1kHz)
▱ : DC voltage (V) at no input signal
Value in ( ) is DC voltage at rated power.
<= mA : DC current at no input signal.

4. OTHERS:
➡ : Signal route.
⊕ : Adjusting point.
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
marked capacitors and resistors have parts numbers.

This is the basic schematic diagram, but the actual circuit may vary due to improvements in design.

SWITCHES:

S100 : STAND-BY
S101 : EQUALIZER REC
S102 : LOUDNESS
S103 : VIDEO/AUX
S104 : TAPE
S105 : CD
S106 : TUNER
S107 : PHONO
S108 : BALANCE L
S109 : BALANCE R
S110 : VOLUME −
S111 : VOLUME +
S112 : MUTING

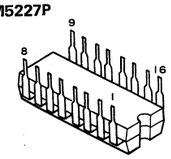
S751 : SPEAKERS (A,B,A+B,OFF)

S801 : POWER (ON, OFF)

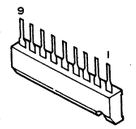
NOTE:
The indicated semiconductors are representative ones only. Other alternative semiconductors may be used and are listed in the parts list.

External Appearances of Transistor and ICs

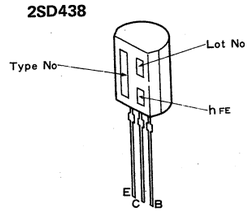
M5227P



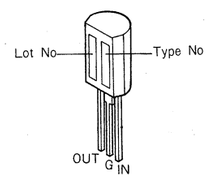
BA6144



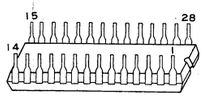
2SD438



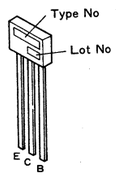
M5278L56(A)



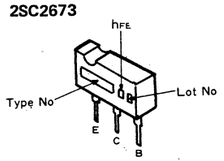
TC9164N



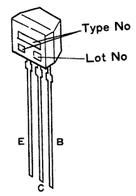
RN1201



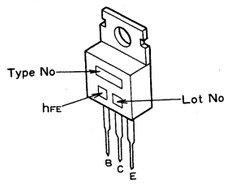
2SC2673



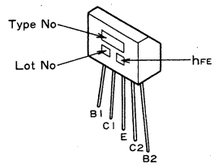
DTC143ES



2SA968
2SC2238



2SA979



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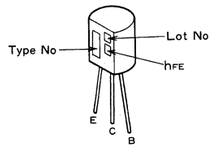
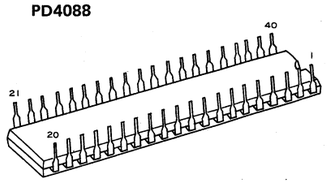
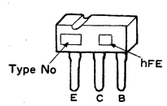
2SC2705



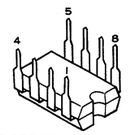
PD4088



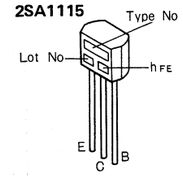
2SA2021



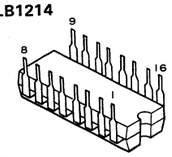
MS5218P
M5218PF



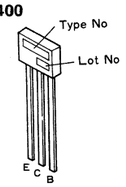
2SC2603
2SA1115



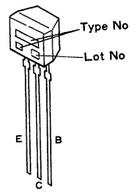
LB1214



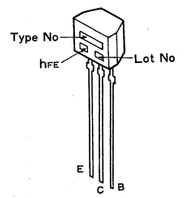
RN1203
2SC3400



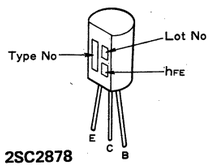
RN2201
DTA143ES



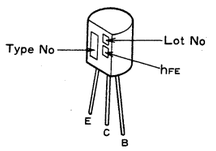
2SA1048
2SC2458



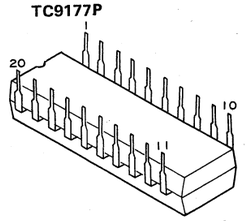
2SB560



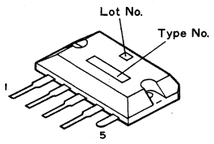
2SC2878



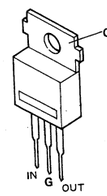
TC9177P



2SA1302
2SC3281



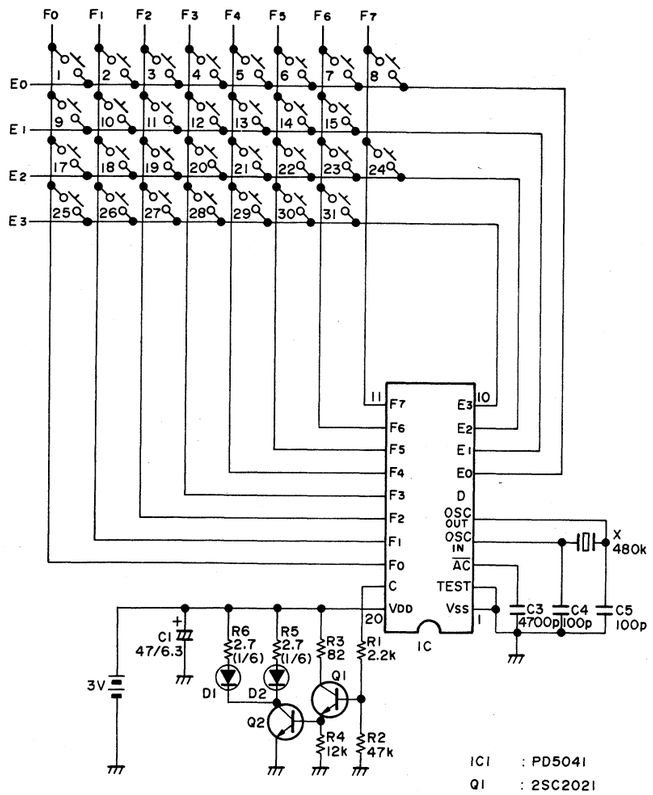
μPC7815H



9. P.C.BOARDS AND SCHEMATIC DIAGRAM OF REMOTE CONTROL UNIT

9-1 CU-SA001

- **Circuit Diagram**

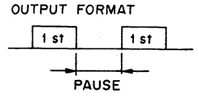


IC1 : PD5041
Q1 : 2SC2021
Q2 : 2SC2673
D1, D2 : SE303A-X

- **Key Cord**

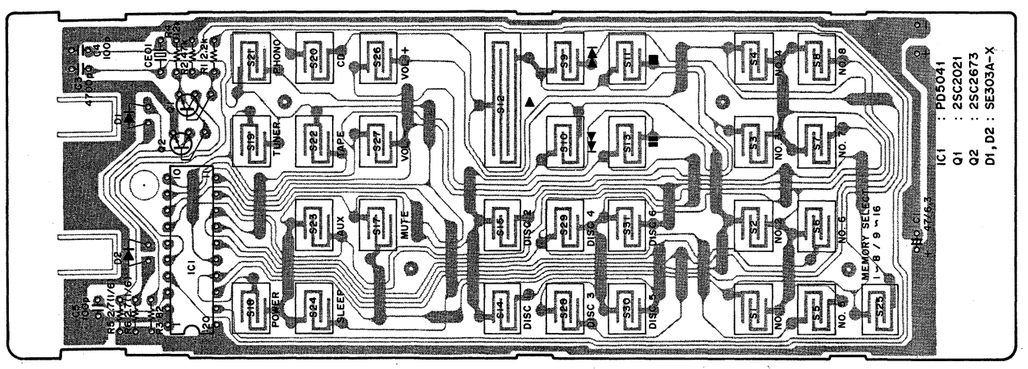
KEY NO.	CORD	DISPLAY	
1	A401	NO. 1	L
2	A402	NO. 2	L
3	A403	NO. 3	L
4	A404	NO. 4	L
5	A405	NO. 5	L
6	A406	NO. 6	L
7	A407	NO. 7	L
8	A408	NO. 8	L
9	A210	▶▶|	L
10	A211	|◀◀	L
11	A216	■	S
12	A217	▶	S
13	A218	▮▮	S
14	A21E	DISC 1	S
15	A21F	DISC 2	S
16			S
17	A512	MUTE	L
18	A51C	POWER	L
19	A547	TUNER	L
20	A54C	CD	L
21	A54D	PHONO	L
22	A54E	TAPE	L
23	A54F	AUX	L
24	A548	SLEEP	L
25	A440	MEMO.Select 1 ~ 8/9 ~16	L
26	A50A	VOL +	L
27	A50B	VOL −	L
28	A250	DISC 3	L
29	A253	DISC 4	L
30	A257	DISC 5	S
31	A25B	DISC 6	S

OUTPUT FORMAT



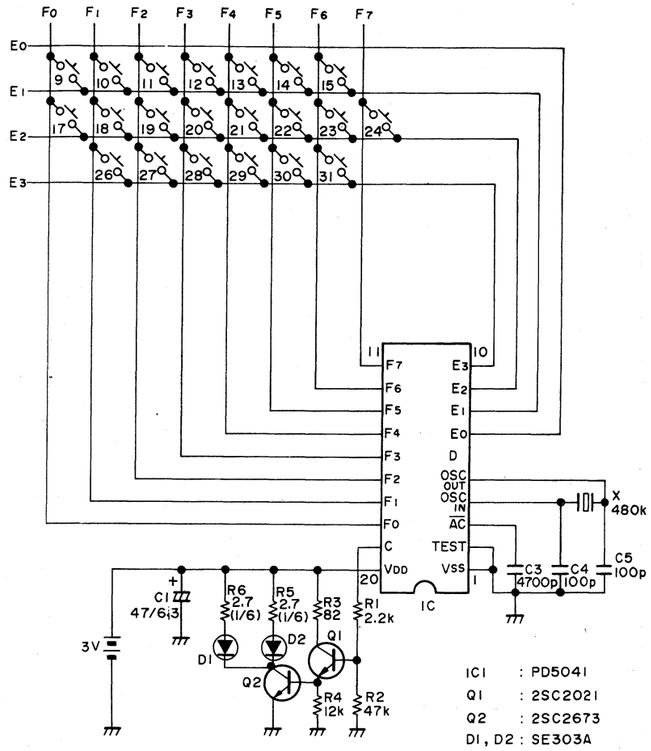
PAUSE
S : About 18.9 msec
L : About 36.0msec

- **P.C. Board**



9-2 CU-SA002

- **Circuit Diagram**

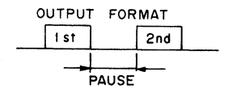


IC1 : PD5041
Q1 : 2SC2021
Q2 : 2SC2673
D1, D2 : SE303A

- **Key Cord**

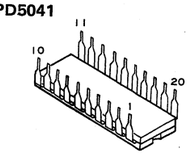
KEY NO.	CORD	DISPLAY	
9	A210	▶▶|	L
10	A211	|◀◀	L
11	A216	■	S
12	A217	▶	S
13	A218	▮▮	S
14	A21E	DISC 1	S
15	A21F	DISC 2	S
16			
17	A512	MUTE	L
18	A51C	POWER	L
19	A547	TUNER	L
20	A54C	CD	L
21	A54D	PHONO	L
22	A54E	TAPE	L
23	A54F	AUX	L
24	A548	SLEEP	L
25			
26	A50A	VOL +	L
27	A50B	VOL −	L
28	A250	DISC 3	L
29	A253	DISC 4	L
30	A257	DISC 5	S
31	A25B	DISC 6	S

OUTPUT FORMAT

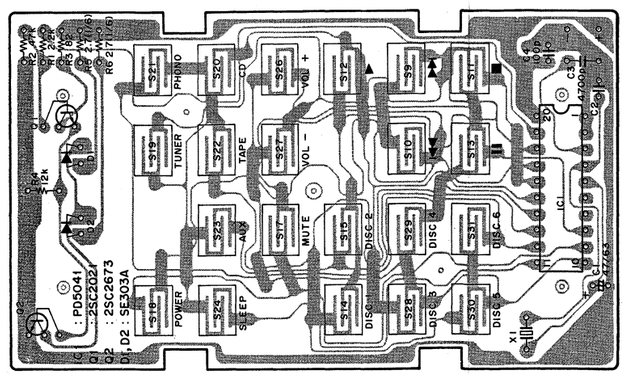


PAUSE
S : About 18.9msec
L : About 36.0msec

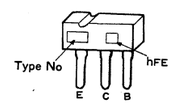
PD5041



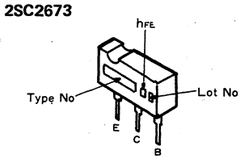
- **P.C. Board**



2SC2021



2SC2673



11. CIRCUIT DESCRIPTIONS

1. CIRCUIT OUTLINE

11.1 Circuit Explanation

- In addition to the remote control unit CU-SA001 for SA-1270 (BK) there is an accessory connection for SA-1270 (A) (BK); (CU-SA002).
- The accessory remote control unit operates the amp, tuner station select (SA-1270 (BK) only) and compact disc player.
- SA-1270 (BK) and SA-1270 (A)(BK) are equipped with a 5 band graphic equalizer and LED display spectrum analyser. Graphic equalizer recording can also be carried out.
- The power amp section is capable of high power FTC output of 105W + 105W.
- Functions are controlled by the microprocessor (PD4088).

11.2 EXPLANATION OF EACH IC

■ **PD4088 (Microcomputer)**

Table 1

No.	Name	Function		I/O	Act.
1	OOUT	———		–	–
2	P20/PSTB	Key matrix (Line Output).		O	L
3	P21/PTOUT				
4	P22				
5	P23				
6	P10	Key Matrix (Line Input).		I	L
7	P11				
8	P12				
9	P13				
10	P30	VOLUME LED.		O	H
11	P31				
12	P32				
13	P33				
14	P70				
15	P71	LOUDNESS LED.		O	H
16	P72	Remote control LED.		O	H
17	P73	———		–	–
18	RESET	Reset signal Input.		I	H
19	CL1	Vibrator connection terminal (1).		–	–
20	VDD	Connection to Mains (+5V).		–	–
21	CL2	Vibrator connection terminal (2).		–	–
22	INT1	Power cut detector — Interrupt terminal.		I	⊥
23	P00/INT0	Remote control signal Input.		I	⊥
24	P01/SCK	Serial Data Output.	Clock Input.	I	⊤
25	P02/SO		Data Output.	O	H
26	P03/SI		———	–	–
27	P60		Clock Output.	O	⊤
28	P61		Strobe.	O	H
29	P62	Stand-by Relay.		O	H
30	P63	Muting (High Active).		O	H
31	P50	Muting (Low Active).		O	L
32	P51	Stanby LED.		O	H
33	P52	Equalizer Recording LED.		O	H
34	P53	FUNCTION.	AUX/VIDEO	O	H
35	P40		TUNER		
36	P41		TAPE		
37	P42		CD		
38	P43		PHONO		
39	Vss	Connection to GND.		–	–
40	EVENT			–	–

■ **Table 2 Remote Control Command Code (Component Code = A5H)**

Hex Cord	Function	Hex Cord	Function	Hex Cord	Function
0AH	(VOL +)	1BH	(OFF)	4CH	(CD)
0BH	(VOL –)	1CH	(STAN'BY)	4DH	(PHONO)
0CH *	(TV)	44H	(LOUDNESS)	4EH	(TAPE)
0DH *	(VDP)	47H	(TUNER)	4FH	(AUX)
0EH *	(VIDEO1)	48H	(SLEEP)	55H	(FUNC)
0FH *	(VIDEO2)	49H	(BALANCE R)	On input of the * signal, the function is AUX.	
46H *	(VIDEO3)	4AH	(" CENTER)		
1AH	(ON)	4BH	(" CENTER L)		

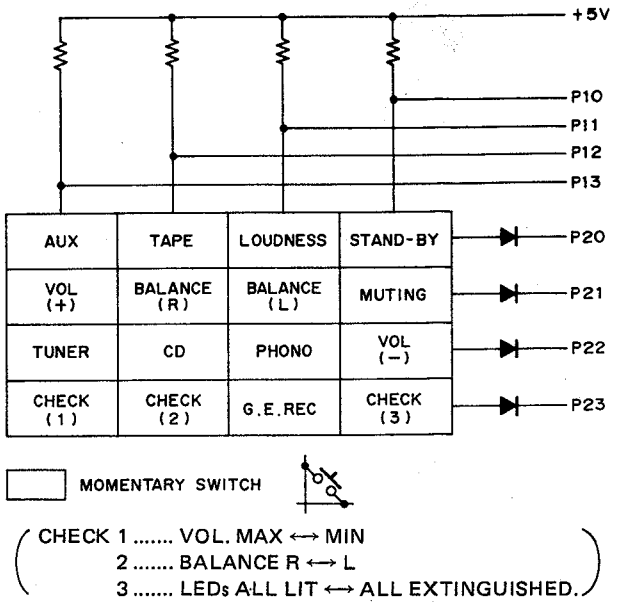


Fig. 11-1 Key Matrix

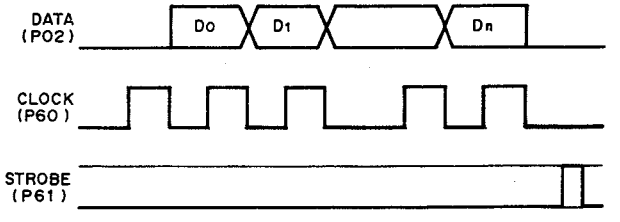


Fig. 11-2 Serial Data Transfer Format

Table 3 Each function switch is controlled by the microprocessor (PD4088)

Switch No.	Switch Name	Switch ON, OFF	Microprocessor operation (IC400)	
S801 (S100)	MAIN POWER (STAND-BY)	ON (ON)	1. Ports 1~7 (Pins ⑥ ~ ⑨ , ② ~ ⑤ , ⑩ ~ ⑬ , ㉟ ~ ㊳ , ㉛ ~ ㉞ , ㉗ ~ ㉚ and ⑭ ~ ⑰) are all at "L" level. 2. Pin ㉛ switches to "H" level → MUTING is effected at the Graphic Equalizer circuit (Q300 ~Q302 ON). 3. Pin ㉚ switches to "H" level → Q207 is ON and there is muting of the SPECTRUM ANALYZER circuit.	
S100 (801)	STAND-BY (MAIN POWER)	OFF (ON)	1. Pin ㉙ switches to "H" level → Q803 ON → STAND-BY relay (R1801) is switched ON and mains input. 2. Pins ⑩ ~ ⑮ repeatedly switch from H to L level → There is an approximate delay of 5 sec until the protector circuit relay comes on and then the volume level indicator LEDs (D113~D117) are flashing. 3. The SPECRUM ANALYZER LEDs are lit simultaneously as the protector circuit relay goes ON and they receive input.	
S101	EQUALIZER REC	ON	1. Serial Data are transmitted from pins ㉕ , ㉗ and ㉘ to IC400 pins ⑩ ~ ⑫ and IC502 pins ⑬ , ⑮ and ⑯ . 2. The electron volume is adjusted to MINIMUM level. (When a function switch is input there is input there is a return to the previous level). 3. The function switch is switched to EQUALIZER REC. 4. Pin ㉞ switches to "H" level → EQUALIZER REC LED is lit.	
S102	LOUDNESS	ON	1. Pins ㉕ , ㉗ and ㉘ send serial data to IC400 pins ⑩ ~ ⑫ 2. The LOUDNESS switch of IC400 is switched ON. 3. Pin ⑮ is switched to "H" level and the LOUDNESS LED is lit.	
S103	VIDEO/AUX	ON	1. Data is transmitted from pins ㉕ , ㉗ and ㉘ to IC400 and IC502. 2. Electron volume is temporarily reduced to MINIMUM and each function is switched. 3. Each LED is lit. 4. Approximately 50 msec after LEDs are lit, the volume returns to the previous level.	Pin ㉞ switches to "H" level → (VIDEO/AUX) LED is lit.
S104	TAPE			Pin ㊱ switches to "H" level → (TAPE) LED is lit.
S105	CD			Pin ㊲ switches to "H" level → (CD) LED is lit.
S106	TUNER			Pin ㉟ switches to "H" level → (TUNER) LED is lit.
S107	PHONO			Pin ㊳ switches to "H" level → (PHONO) LED is lit.
S108	BALANCE L	ON	1. Data is transferred from pins ㉕ , ㉗ and ㉘ to IC400. 2. LR sound balance is adjusted. 3. Volume level is adjusted. 4. D115 and D117 LEDs are lit.	Lit LED positions are as follows: Pin ⑩ "H" level → Left side LED lit. Pin ⑫ "H" level → Center position LED lit. Pin ⑭ "H" level → Right side LED lit.
S109	BALANCE R			
S110	VOLUME −			Lit LED positions are as follows: Pin ⑩ "H" level → MIN side LED lit. Pin ⑫ "H" level → Center position LED lit. Pin ⑭ level → MAX side LED lit.
S111	VOLUME +			
S112	MUTING	ON	1. Data is transferred to IC400. 2. Pins ⑩ ~ ⑮ switch repeatedly from "H" to "L" → Volume level LEDs are flashing. 3. Volume is reduced. 4. After 4~5 sec the LED display returns to volume level display.	
			Other Operations: 1. With the VOLUME at a minimum or with the MUTING switch ON, output of pin ⑰ of PD4088, when in use, is as follows: • When using PD4088; "L" level. • When using PD4088-A, the level is "H". Q403~Q401 go ON and on the electron volume output side, MUTING is carried out. 2. When the mains backup is cut, the functions are switched to the TUNE side.	

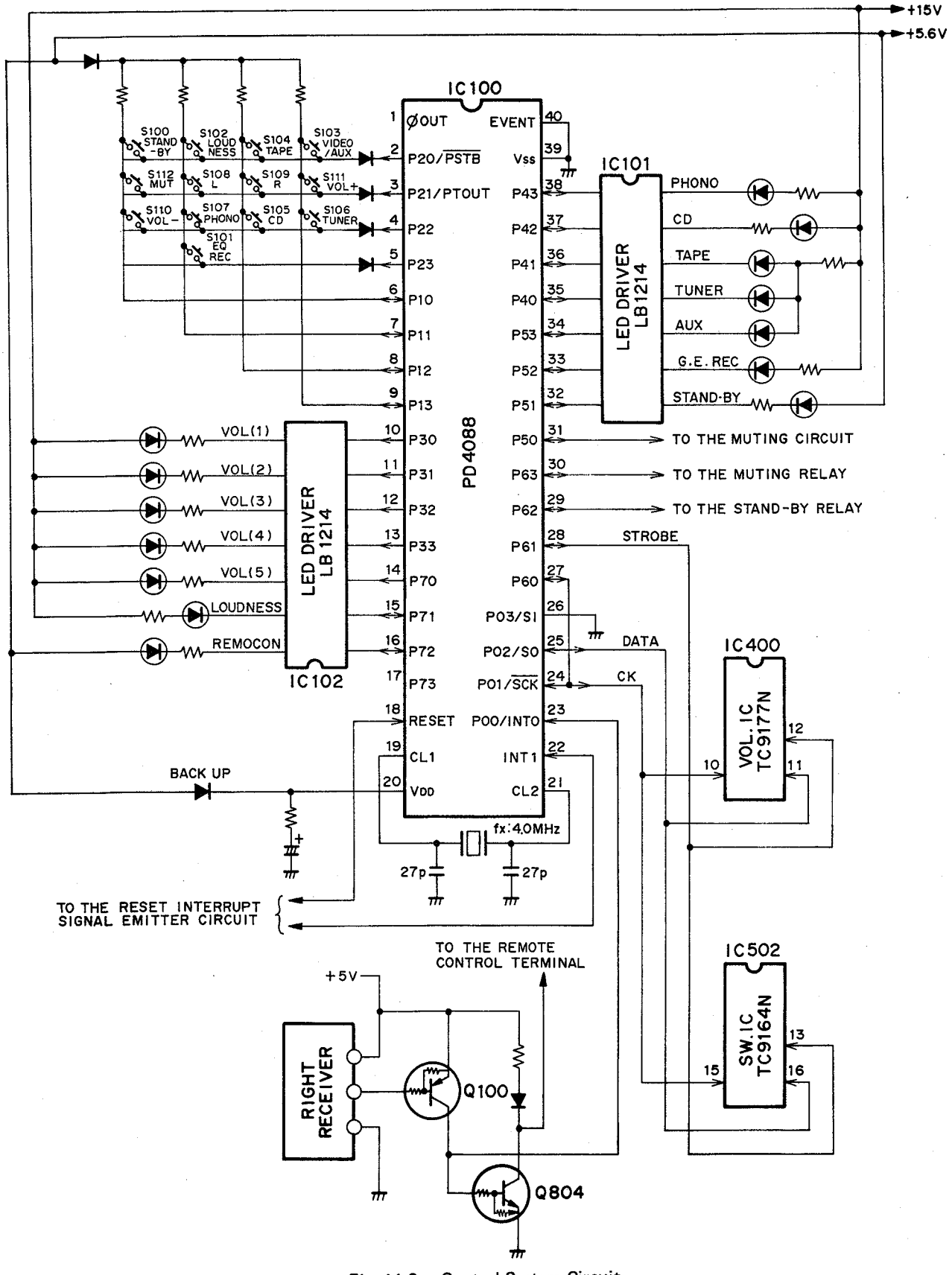


Fig. 11-3 Control System Circuit

■ TC9177P (Electric Volume)

Block Diagram

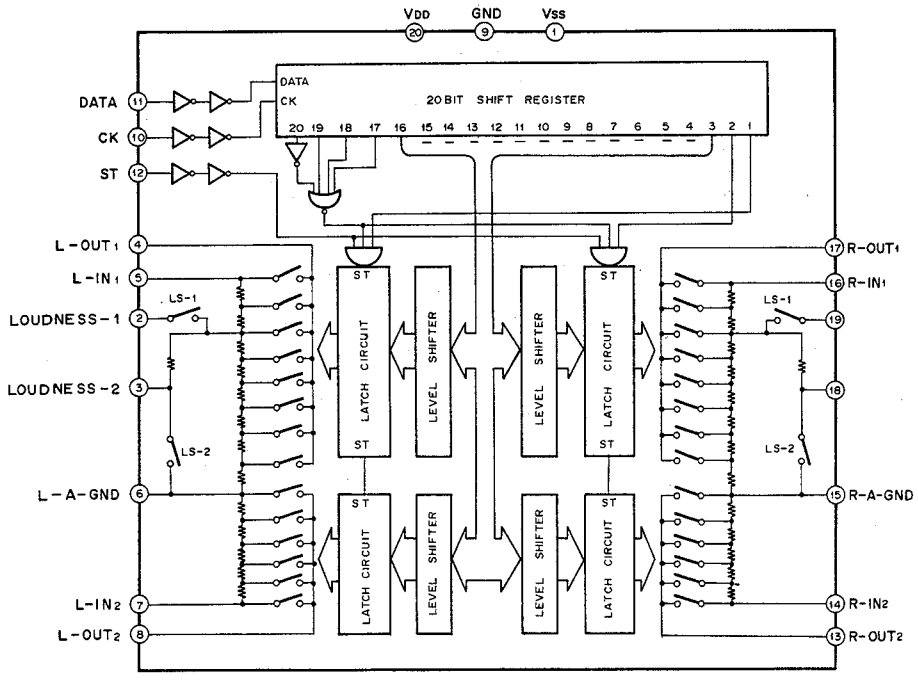
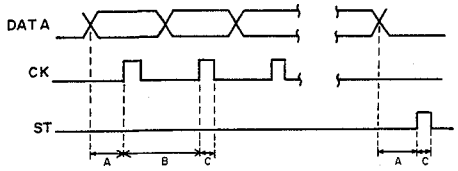


Fig. 11-4 Block Diagram of TC9177P

Input Data Format



A≧5 μsec, B≧10 μsec, C≧1 μsec

- Input an arbitrary ATT amount from DATA, CK and ST terminals.
- Data consists of 20 bits as shown below:

bit		
1	Lch	Selection bit
2	Rch	
3	Loudness	ON/OFF
4	0 dB	2 dB Step ATT
5	−2 dB	
6	−4 dB	
7	−6 dB	
8	−8 dB	
9	0 dB	10 dB step ATT
10	−10 dB	
11	−20 dB	
12	−30 dB	
13	−40 dB	
14	−50 dB	
15	−60 dB	
16	−70 dB	
17	"0"	Chip selection bit
18	"0"	
19	"0"	
20	"1"	

※ ATT ∞ is carried out in accordance with −78 dB data.

"1" = ON
"0" = OFF
CK • ST is rise up action

• Loudness Function

ON .... Setting the third bit of the data to "1", LS-1 becomes ON and LS-2 becomes OFF and they are output to the loudness terminal. By adding a high and low frequency boost circuit to the terminal, loudness control can be applied under less than −20 dB.

OFF ... Setting the third bit of the data to "0", LS-1 becomes OFF and LS-2 becomes ON, and the externally attached high and low frequency boost circuit does not operate.

Table 4 Description of TC9177P

Pin No.	Symbol	I/O	Description
1	V_{SS}	—	−16V
2	L-LOUDNESS 1	—	High and low frequency boost circuit is connected. When loudness data is input, loudness control is achieved.
3	L-LOUDNESS 2	—	
4	L-OUT 1	O	Output of the pin 5 input after attenuation (0 to −70 dB in 10 dB steps).
5	L-IN 1	I	10 dB attenuator input
6	AC GND	—	AC ground
7	L-IN 2	I	2 dB attenuator input
8	L-OUT 2	O	Output of the pin 7 input after attenuation (0 to −8 dB in 2 dB steps).
9	GND	—	Ground
10	CK	I	Clock input for serial data reading
11	DATA	I	Serial data input for deciding amount of attenuation. Data is read by synchronizing with clock.
12	ST	I	Data is latched for data updating purposes when this terminal is switched to H level.
13	R-OUT 2	O	Output of the pin 14 input after attenuation (0 to −8 dB in 2 dB steps).
14	R-IN 2	I	2 dB attenuator input
15	AC GND	—	AC ground
16	R-IN 1	I	10 dB attenuator input
17	R-OUT 1	O	Output of the pin 16 input after attenuation (0 to −70 dB in 10 dB steps).
18	R-LOUDNESS 2	—	High and low frequency boost circuit is connected. When loudness data is input, loudness control is achieved.
19	R-LOUDNESS 1	—	
20	V_{DD}	—	+16V

■ TC9164N (Electric Switch)

Block Diagram

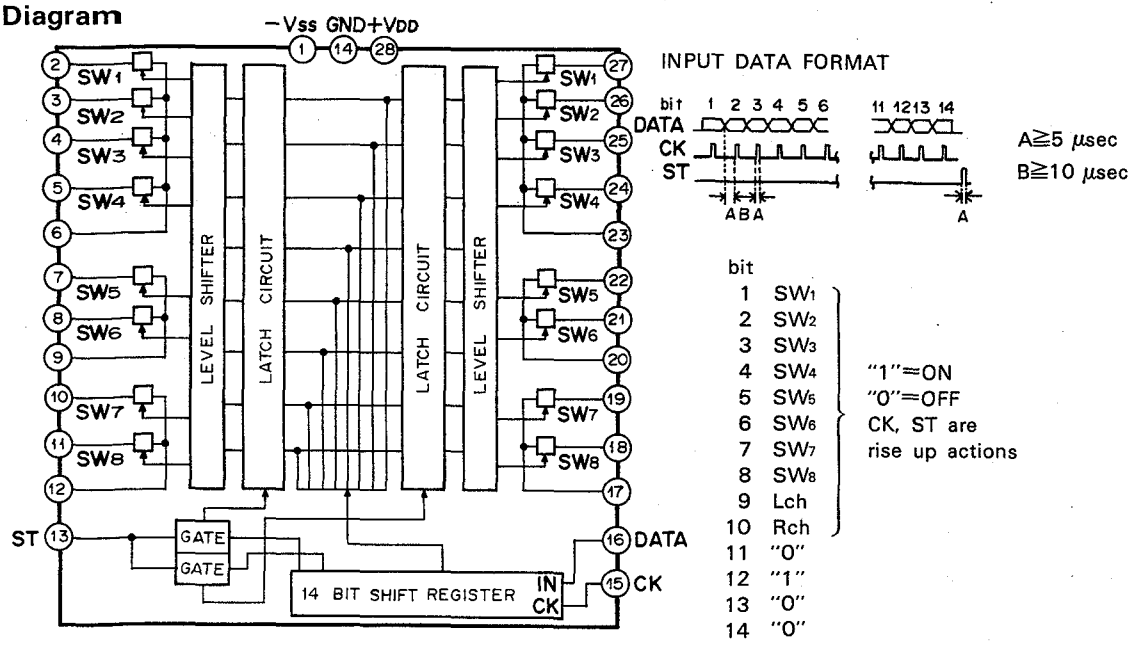


Fig. 11-5 Block Diagram of TC9164N

Truth Table 4 of TC9164N

DATA INPUT (⑯ pin) (bit)														SW**	REC-SEL	L CH (Pin)	R CH (Pin)
1	2	3	4	5	6	7	8	9	10	11	12	13	14			IN → OUT	IN → OUT
1	0	0	0	0	0	1*	0*	1	1	0	1	0	0	SW1	PHONO	② → ⑥	㉗ → ㉓
0	1	0	0	0	0	1*	0*	1	1	0	1	0	0	SW2	TUNER	③ → ⑥	㉖ → ㉓
0	0	1	0	0	0	1*	0*	1	1	0	1	0	0	SW3	CD	④ → ⑥	㉕ → ㉓
0	0	0	1	0	0	1*	0*	1	1	0	1	0	0	SW4	VIDEO/AUX	⑤ → ⑥	㉔ → ㉓
0	0	0	0	1	0	0	0	1	1	0	1	0	0	SW5	TAPE PLAY	⑦ → ⑨	㉒ → ⑳

* With the equalizer recording OFF, bit 7 is "0" and bit 8 is "1".
** This SW is an internal switch with in IC (See Fig. 4-5).

Description of TC9164N

Pin No.	I/O	Description	Pin No.	I/O	Description
1	—	VSS	15	I	CK
2	I	Lch-SW1	16	I	DATA
3	I	Lch-SW2	17	O	Rch-COM3
4	I	Lch-SW3	18	I	Rch-SW8
5	I	Lch-SW4	19	I	Rch-SW7
6	O	Lch-COM1	20	O	Rch-COM2
7	I	Lch-SW5	21	I	Rch-SW6 (NC)
8	I	Lch-SW6 (NC)	22	I	Rch-SW5
9	O	Lch-COM2	23	O	Rch-COM1
10	I	Lch-SW7	24	I	Rch-SW4
11	I	Lch-SW8	25	I	Rch-SW3
12	O	Lch-COM3	26	I	Rch-SW2
13	I	ST	27	I	Rch-SW1
14	—	GND	28	—	VDD

12. ELECTRICAL PARTS LIST

NOTES:

- *When ordering resistors, first convert resistance values into code form as shown in the following examples.*
  Ex. 1 *When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).*

560Ω	*56 × 10¹*	*561*	*RD¼PS 5 6 1 J*
47kΩ	*47 × 10³*	*473*	*RD¼PS 4 7 3 J*
0.5Ω	*0R5*		*RN2H 0 R 5 K*
1Ω	*010*		*RS1P 0 1 0 K*

  Ex. 2 *When there are 3 effective digits (such as in high precision metal film resistors).*

5.62kΩ	*562 × 10¹*	*5621*	*RN¼SR 5 6 2 1 F*

- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

Miscellaneous Parts List

P.C. BOARD ASSEMBLIES

Mark	Symbol & Description	Part No.
	AF Assembly	AWZ1065
	Switch assembly (A)	Non supply
	Switch assembly (B)	Non supply
	Transistor assembly	Non supply
	IC Assembly	Non supply
	Complex (A) assembly	AWZ1070
	Complex (B) assembly	AWZ1071

OTHERS

Mark	Symbol & Description		Part No.
⚠ ★★	Q3A, Q4A		2SA1302-0*
⚠ ★★	Q1A, Q2A		2SC3281-0*
⚠	C1	Power capacitor (0.01/120V)	ACG1003
	C2	Ceramic capacitor	CKDYX104M25
⚠	T1	Power transformer (AC120V)	ATS1018
⚠ ★★	FU3, FU4	Fuse (2A/125V)	AEK-122
⚠ ★★	FU1	Fuse (6.3A/125V)	AEK-309
⚠		AC Power cord	ADG-089
⚠		AC Socket (3P)	AKP-515

* hfe of Q1 – Q4 should have the same value.

AF Assembly (AWZ1065)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC501	M5218P
★★	IC503	M5218PF
★★	IC803	M5278L56 (A)
★★	IC802	NJM79M15A
★★	IC502	TC9164N
★★	Q804	RN1201 (DTC143ES)
★★	Q805	RN1203 (2SC3400)
★★	Q706	2SA1115 (2SA1048)
★★	Q611A, Q612A	2SA968-0*
★★	Q601, Q602	2SA979
★★	Q609A, Q610A	2SC2238-0*
★★	Q603, Q604	2SC2240
★★	Q703, Q704, Q801, Q802	2SC2603 (2SC2458)
★★	Q605, Q606, Q701, Q702	2SC2705
★★	Q705, Q803	2SD438
	D601, D602, D607–D610, D701–D704, D812–D815	1SS131
★	D705	KZL130
★	D801	RBV602
★	D603 – D606	RD5.6ESB
★	D811	RD10ESB
★	D802 – D809	S5566

* hfe of Q601, Q602, Q611, Q612 should have the same value.

RELAIES

Mark	Symbol & Description		Part No.
★★	RY701	Relay (MUTING)	ASR-112 (ASR-107)
⚠ ★★	RY801	Relay (STAND-BY)	ASR-512

COILS, TRANSFORMER

Mark	Symbol & Description		Part No.
	L601, L602	Choke coil	ATH1002
⚠ ★	T801	Power transformer (AC120V)	ATT1011

CAPACITORS

Mark	Symbol & Description	Part No.
	C801, C804 (0.01)	ACG019
⚠	C815 (0.01)	ACG1002
	C802, C803 (8200/71)	ACH1005
	C613, C614	CCCSL020C50 (CCDSL020C50)
	C611, C612	CCCSL020C500 (CCDSL020C500)
	C603, C604	CCCSL101J50 (CCDSL101J50)
	C619 – C622	CCCSL101K500 (CCDSL101K500)
	C605, C606	CCCSL470J50 (CCDSL470J50)
	C509, C510	CCCSL680J50 (CCDSL680J50)
	C701, C702	CEANP2R2M50
	C813, C814	CEAS0R1M50
	C705, C810, C819	CEAS010M50
	C517, C518, C601, C602	CEAS100M25
	C507, C508	CEAS101M10
	C627	CEAS101M100
	C615, C616	CEAS101M16
	C704, C817, C818	CEAS101M25
	C617, C618	CEAS101M50
	C806	CEAS102M35
	C503, C504, C515, C516, C808	CEAS2R2M50
	C805	CEAS222M35
	C703	CEAS471M16
	C812	CEAS471M25
	C607, C608	CKCYB102K50 (CKDYB102K50)
	C501, C502, C505, C506	CKCYB391K50 (CKDYB3P1K50)
	C811	CKCYF472Z500 (CKDYF472Z500)
	C519	CKCYX104M25
	C520	CKDYX104M25
	C609, C610	CQMA102K50
	C511, C512	CQMA222K50
	C513, C514	CQMA822K50
	C623 – C626	CQMA823K50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
⚠	R637, R638	ACN-139
⚠	R639, R640, R803	RD1/2PMF □□□J
⚠	R701, R702, R802, R809	RD1/4PMF □□□J
	R601 – R610, R612 – R620, R629 – R634, R707, R708, R710, R713, R812, R813	RD1/4PM □□□J
⚠	R635, R636, R641 – R647, R705, R706	RFA1/4PS□□□J
⚠	R801	RS1PMF2R2J
	R712	RS2LMF222J
	Other resistors	RD1/8PM □□□J

OTHERS

Mark	Symbol & Description	Part No.
	Terminal 4P (ADAPTOR · OUT/IN)	AKB-094
	Terminal 6P (PHONO · TUNER · CD · VIDEO/AUX · REC · PLAY)	AKB-095
	Terminal 8P (SPEAKERS)	AKE-111
	Terminal (CONTROL/OUT)	AKN-207
	Transistor socket	AKH-017
	Screw (AF assembly)	PBZ30P060FMC

Switch Assembly (A)

SWITCH

Mark	Symbol & Description		Part No.
★★	S751	Push switch (SPEAKERS)	SUL8LXYS

RESISTORS

Mark	Symbol & Description	Part No.
⚠	R751, R752	RS2LMF471J

OTHERS

Mark	Symbol & Description	Part No.
	Jack (PHONE)	AKN-045

Switch Assembly (B)

SWITCH

Mark	Symbol & Description		Part No.
⚠ ★★	S801	Push switch (MAIN POWER)	ASG1005

CAPACITOR

Mark	Symbol & Description		Part No.
⚠	C816	Power capacitor (0.01)	ACG1002 (ASG1007)

Transistor Assembly

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	Q607, Q608	2SC2603-F*

*hfe of Q607, Q608 should have the F value only.

IC Assembly

SEMICONDUCTORS

Mark	Symbol & Description		Part No.
★★	IC801	Regurator IC	UPC7815H

CAPACITORS

Mark	Symbol & Description	Part No.
	C807, C809 Electrolytic capacitor	CEAS0R1M50

Complex (A) Assembly (AWZ1070)

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★★	IC200 —IC204	BA6144
★★	IC101, IC102	LB1214
★★	IC300, IC301	M5227P
★★	IC100	PD4088
★★	Q207	RN1203 (2SC3400)
★★	Q100	RN2201 (DTA143ES)
★★	Q300	2SA1115 (2SA1048)
★★	Q206	2SB560
★★	Q101, Q200 – Q205	2SC2603 (2SC2458)
★★	Q301, Q302	2SC2878
★	D100 LED	AEL1008
★	D101 – D105 LED	AEL1017
★	D113 – D118 LED	AEL1009
★	D106 LED	AEL1010
★	D119 LED	AEL1011
★	D200 – D204 LED	AEL1012
	D108 – D112, D120	1SS131

SWITCHES

Mark	Symbol & Description	Part No.
★★	S100–S112 Tact switch	ASG-711

CAPACITORS

Mark	Symbol & Description	Part No.
	C103 Electrolytic capacitor	ACH1009
	C100, C101	CCCH270J50 (CCDCH270J50)
	C312, C313	CEASR15M50
	C207, C211, C215	CEASR33M50
	C308, C309	CEASR47M50
	C200	CEAS010M50
	C304, C305	CEAS1R5M50
	C104, C324, C325	CEAS100M25
	C326, C327	CEAS470M25
	C102	CEAS470M16
	C203, C219	CEJAR33M50
	C300, C301	CEJA100M25
	C204, C208, C212, C216, C220	CEJA4R7M35
	C314, C315	CKCYB182K50 (CKDYB182K50)
	C213, C214	CKCYB222K50 (CKDYB222K50)
	C328, C329	CKCYB331K50 (CKDYB331K50)
	C322, C323	CKCYB471K50 (CKDYB471K50)
	C318, C319	CKCYB561K50 (CKDYB561K50)
	C310, C311	CKCYB562K50 (CKDYB562K50)
	C209, C210	CKCYB682K50 (CKDYB682K50)
	C217, C218	CKCYB821K50 (CKDYB821K50)
	C106	CKCYB822K50 (CKDYB822K50)
	C205, C206	CKCYX153M50 (CKDYX153M25)
	C105, C201, C202, C316, C317	CKDYF473Z50
	C320, C321	CQMA153K50
	C306, C307	CQMA183K50
	C302, C303	CQMA563K50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description		Part No.
	VR300 – VR304	Slide volume	ACU1004
	R306		RFA1/4PS470J
		Other resistors	RD1/8PM □□□J

OTHERS

Mark	Symbol & Description	Part No.
	Ceramic resonator	ASS-030
	Remote control censor unit	AXX1002

Complex (B) Assembly (AWZ1071)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
★★	IC401	M5218PF
★★	IC400	TC9177P
★★	Q400	RN1203 (2SC3400)
★★	403	2SA1115 (2SA1048)
★★	Q401, Q402	2SC2878

CAPACITORS

Mark	Symbol & Description	Part No.
	C402, C403	CCCSL151J50 (CCDSL151J50)
	C414, C415	CCCSL560J50 (CCDSL560J50)
	C400, C401, C406, C407	CEAS100M50

Mark	Symbol & Description	Part No.
	C410, C411	CEAS2R2M50
	C408, C409	CEAS470M16
	C412, C413	CEAS470M25
	C416, C417	CKCYF473Z50 (CKDYF473Z50)
	C404, C405	CQMA333K50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R424	RFA1/4PS470J
	Other resistors	RD1/8PM □□□J

REMOTE CONTROL SECTION/ELECTRICAL PARTS LIST (CU-SA001)

P.C. Board assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★★	IC1	PD5041
★★	Q1	2SC2021
★★	Q2	2SC2673
★	D1, D2 LED (RED)	SE303A(Y)

CAPACITORS

Mark	Symbol & Description	Part No.
	C1	CEAS470M10
	C3, C4	CCDSL101J50
	C5	CKDYF472Z50

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R1–R6	RD1/8PM □□□J

OTHERS

Mark	Symbol & Description	Part No.
	X1 Ceramic resonator	CSB480EB

CU-SA002

P.C. Board Assembly

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
★★	Q1	2SC2021
★★	Q2	2SC2673
★	D1, D2 LED (RED)	SE303A(Y)

CAPACITORS

Mark	Symbol & Description	Part No.
★★	IC1	PD5041
	C1, C2	CCDSL101J50
	C3	CKDYF103Z50
	C4	CEAS470M10

RESISTORS

Note: When ordering resistors, convert the resistance value into code form, and then rewrite the part no. as before.

Mark	Symbol & Description	Part No.
	R1–R6	PD1/8PM □□□J

OTHERS

Mark	Symbol & Description	Part No.
	Ceramic resonator	CSB480EB

13. FOR S/G TYPE

NOTES:

- *The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.*
- *For your Parts Stock Control, the fast moving items are indicated with the marks ★★ and ★.*
  ★★ GENERALLY MOVES FASTER THAN ★
  This classification shall be adjusted by each distributor because it depends on model number, temperature, humidity, etc.
- *Parts marked by " ⊙ " are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.*

- **The SA-1270[BK]/S/SG type is the same as SA-1270[BK]/KU type with the exception of the following sections.**

Contrast of Miscellaneous Parts

Mark	Symbol & Description		Part No.		Remarks
			SA-1270[BK] KU type	SA-1270[BK] S/G type	
⚠		AC Power cord	ADG-089	ADG-087	
⚠ ★★	FU3, FU4	Fuse (2A 125V)	AEK-122	.....	
⚠ ★★	FU3, FU4	Fuse (2A 125V)	.....	AEK-122	
⚠ ★★	FU1	Fuse (6.3A 125V)	AEK-309	.....	
⚠ ★★	FU1, FU2	Fuse (3.15A 125V)	.....	AEK-124	
⚠ ★★	S1	Line voltage selector	.....	AKX-507	
⚠ ★★	S2	Line voltage selector	.....	AKX1004	
⚠ ★	T1	Power transformer (T1 120V)	ATS1018	.....	
⚠ ★	T1	Power transformer (AC110V/120V/220V/240V)	.....	ATS1028	
		AF assembly	AWZ1065	AWZ1082	

The AF assembly (AWZ1082) is the same as the AF assembly (AWZ1065) with the exception of the following sections.

Mark	Symbol & Description	Part No.		Remarks
		AWZ1065 (KU type)	AWZ1082 (S/G type)	
⚠ ★★	T801 Power transformer (AC110V, 120V, 220V, 240V)	ATT1011	ATT1015	

Circuit Diagram for S/G Type